CLAIMS

1. A Doppler ultrasound system, comprising:

an ultrasound probe to emit ultrasound signals and detect reflected signals therefrom;

a processor coupled to the ultrasound probe and operable to generate Doppler ultrasound data from the detected reflected signals and process the Doppler ultrasound data to calculate blood flow data, including blood flow velocity data and detected Doppler signal power data, for a plurality of locations and for a plurality of time intervals, the processor further operable to identify from the blood flow data locations at which blood flow having a hemodynamic characteristic is present; and

a user interface coupled to the processor to provide blood flow information based on the blood flow velocity data and the detected Doppler signal power data, the blood flow information representative of detected blood flow and the presence of the hemodynamic characteristic.

2. The Doppler ultrasound system of claim 1 wherein the user interface comprises a graphical display coupled to the processor to display the blood flow velocity data and the detected Doppler signal power data as blood flow information indicative of the locations at which blood flow is detected and the locations at which blood flow having the hemodynamic characteristic is present.

3. The Doppler ultrasound system of claim 2, further comprising a display driver coupled to the processor and the graphical display, the display driver controlling the graphical display to display the blood flow information for the plurality of locations as having a first or second color based on the blood flow velocity data and having a color characteristic that varies based on the detected Doppler signal power data, the display driver further controlling the graphical display to display the locations at which blood flow having the hemodynamic characteristic as regions of a third color.

4. The Doppler ultrasound system of claim 3 wherein the color characteristic that varies based on the detected Doppler signal power data comprises color brightness.

5. The Doppler ultrasound system of claim 1 wherein the processor is operable to identify locations at which blood flow having the hemodynamic characteristic is present by determining from the blood flow velocity data blood flow having a mean blood flow velocity in excess of a velocity threshold value.

6. The Doppler ultrasound system of claim 1 wherein the process is operable to identify locations at which blood flow having the hemodynamic characteristic is present by calculating a value for a hemodynamic parameter from the blood flow velocity data for a set of time intervals and comparing the value to a threshold value.

7. A Doppler ultrasound system, comprising:

an ultrasound probe to emit ultrasound signals and detect reflected signals therefrom;

a processor coupled to the ultrasound probe and operable to process the detected reflected signals and calculate therefrom blood flow data for a plurality of locations at time intervals, the processor further operable to identify locations at which blood flow having a hemodynamic characteristic is present based on the blood flow data calculated for a plurality of the time intervals; and

a user interface coupled to the processor to provide blood flow information based on the blood flow data, the blood flow information representative of detected blood flow and the presence of the hemodynamic characteristic.

8. The Doppler ultrasound system of claim 7 wherein the user interface comprises a graphical display coupled to the processor to display the blood flow data as blood flow information indicative of the locations at which blood flow is detected and the locations at which blood flow having the hemodynamic characteristic is present.

9. The Doppler ultrasound system of claim 8 wherein the processor is operable to calculate from detected reflected signals blood flow velocity data and detected Doppler signal power data for the plurality of locations at the time intervals.

10. The Doppler ultrasound system of claim 9, further comprising a display driver coupled to the processor and the graphical display, the display driver controlling the graphical display to display the blood flow data for the plurality of locations as having a first or second color based on the blood flow velocity data and having a color characteristic that varies based on the detected Doppler signal power data, the display driver further controlling the graphical display to display the locations at which blood flow having the hemodynamic characteristic as regions of a third color.

11. The Doppler ultrasound system of claim 10 wherein the color characteristic comprises color brightness.

12. The Doppler ultrasound system of claim 9 wherein the processor is operable to calculate the blood flow velocity data from the blood flow data for a set of time intervals, and to identify locations at which blood flow having the hemodynamic characteristic is present by calculating a value representative of a hemodynamic parameter from a plurality of the blood flow velocity data.

13. The Doppler ultrasound system of claim 7 wherein the processor is operable to identify locations at which blood flow having the hemodynamic characteristic by calculating from the blood flow data a value representing a hemodynamic parameter and comparing the value to a threshold value.

14. A Doppler ultrasound system, comprising:

an ultrasound probe to emit ultrasound signals and detect reflected signals therefrom;

an ultrasound processor coupled to the ultrasound probe and operable to process the detected reflected signals and generate therefrom blood flow data for a plurality of locations at time intervals, the processor further operable to identify locations at which blood flow satisfying a hemodynamic criterion is present based on the blood flow data; and

a user interface coupled to the processor to provide blood flow information based on the blood flow data, the blood flow information representative of detected blood flow and the presence of the hemodynamic characteristic.

15. The Doppler ultrasound system of claim 14 wherein the user interface comprises a graphical display coupled to the processor to display the blood flow velocity data and the detected Doppler signal power data as blood flow information indicative of the locations at which blood flow is detected and the locations at which blood flow satisfying the hemodynamic criterion is present.

16. The Doppler ultrasound system of claim 15 wherein the ultrasound processor is operable to calculate from the detected reflected signals blood flow velocity data representative of blood flow velocity for the plurality of locations at the time intervals.

17. The Doppler ultrasound system of claim 16, further comprising a display driver coupled to the ultrasound processor and the graphical display, the display driver controlling the graphical display to display the blood flow information for the plurality of locations as having a first or second color based on the blood flow velocity data and a color intensity based on the blood flow velocity relative to a mean blood flow velocity, and the locations at which blood flow satisfying the hemodynamic criterion as regions of a third color.

18. The Doppler ultrasound system of claim 17 wherein the color characteristic comprises color brightness.

19. The Doppler ultrasound system of claim 16 wherein the ultrasound processor is operable to calculate from the detected reflected signals detected Doppler signal power data for the plurality of locations at the time intervals.

20. The Doppler ultrasound system of claim 16, further comprising a display driver coupled to the ultrasound processor and the graphical display, the display driver controlling the graphical display to display the blood flow information for the plurality of locations as having a first or second color based on the blood flow velocity data and having a color characteristic that varies based on the detected Doppler signal power data, the display driver further controlling the graphical display to display the locations at which blood flow satisfying the hemodynamic criterion as regions of a third color.

21. The Doppler ultrasound system of claim 14 wherein the processor is operable to identify locations at which blood flow satisfying a hemodynamic criterion is present by calculating a value from the blood flow data from a plurality of time intervals and comparing the value to a threshold value.

22. In a Doppler ultrasound system having a ultrasound transducer emitting ultrasound signals, a method for processing detected reflected signals comprising:

processing the detected reflected signals and calculating therefrom blood flow data for a plurality of locations at time intervals;

identifying locations at which blood flow having a hemodynamic characteristic is present from the blood flow data calculated for a plurality of the time intervals; and

generating from the blood flow data blood flow information representative of detected blood flow and the presence of the hemodynamic characteristic.

23. The method of claim 22 wherein generating the blood flow information comprises generating display data indicative of the locations at which blood flow is detected and the locations at which blood flow having the hemodynamic characteristic is present.

24. The method of claim 23 wherein calculating from the detected reflected signals blood flow data comprises calculating blood flow velocity data representative of blood flow velocity for the plurality of locations at the time intervals.

25. The method of claim 24, further comprising displaying the blood flow data as having a first or second color based on the blood flow velocity data and having a color characteristic that varies based on the blood flow velocity relative to a mean blood flow velocity, and the locations at which blood flow satisfying the hemodynamic criterion as regions of a third color.

26. The method of claim 25 wherein the color characteristic comprises color brightness.

27. The method of claim 24 wherein calculating from the detected reflected signals blood flow data further comprises calculating detected Doppler signal power data for the plurality of locations at the time intervals.

28. The method of claim 27, further comprising displaying the blood flow data as having a first or second color based on the blood flow velocity data and a color intensity based on the detected Doppler signal power data, and the locations at which blood flow satisfying the hemodynamic criterion as regions of a third color.